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Aβ oligomerization and fibrillization seems evident in memory loss, however, the responsible pathomechanisms are not clear. Overexpression of the receptor for advanced glycation end-products (RAGE) in brain amyloidosis-β suggests its involvement in memory loss. RAGE participates in Ab, binding, oligomerization and initiation of inflammation. We generated transgenic mice with human APP(Swe-Dt-Lon) for a developmental study of learning deficits and RAGE expression. APP, Aβ and RAGE in the brain were tested by WB and ICH, respectively. Learning and memory were tested by the Morris water maze test. The strain Tg9279 used in the study had between 15 and 20 transgene copies per genome. Brain levels of Aβ1–40 and Aβ1–42 were 3 and 2 fmol/100 μg protein, respectively, in 6-week-old heterozygous animals. The onset of fibrillar amyloid-b formation, at the age of 12 weeks, coincided with learning and memory deficits in homozygotes. The onset of amyloidosis-β in heterozygous mice was 12 months, however, the onset of learning and memory deficits preceded amyloid deposition by 3 months. We found that RAGE levels in the brains of control mice were the highest at 3 weeks and remained lower and stable at older age. RAGE levels were increased in brains with medium but not with high levels of APP and Aβ expression. The data suggest involvement of distinct mechanisms in memory decline depending on the levels of Aβ expression. Supported by NYS OMRDD.

doi:10.1016/j.ydbio.2007.03.147

Program/Abstract # 92
Variations in the bone marrow and the thymus in BALB/c neonates from mothers infected with Toxoplasma gondii during gestation

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Toxoplasma gondii infection during gestation is the cause of congenital malformations in living newborn children, as well as the cause of abortions, ocular and neurological disorders. Although several aspects of toxoplasmosis have been studied, alterations in the lymphopoietic system and its contribution to the disease are still poorly understood. We studied the changes in the haematopoietic system during the neonatal stage in Balb/c mice. The percentage of plasma cells was significantly increased in neonates from mothers infected during the last day of gestation. Nevertheless, the percentages of lymphocytes and monocytes were significantly decreased on the same neonates. Weight of the thymus and the number of thymic cells were dramatically decreased in neonates from infected mothers. Results suggest that infection of the mother during the last day of gestation primarily provokes in the neonates changes in the lymphoid organs. The decrease of lymphocytes in bone marrow could be the reason for the diminution in the weight of the thymus. The increase in plasma cells suggests an activation of the immune response possibly due to the infection with *T. gondii*. Consequently, the variations in the haematopoietic cellular populations can contribute to the severity of the disease in early periods of the development.

doi:10.1016/j.ydbio.2007.03.148

Program/Abstract # 93
Periodontitis a risk factor for pre-term birth and low weight of products: An animal model

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Pre-term birth accompanied by low weight at birth (PLBW) is considered one of the most important causes of neonatal mortality. Several researches have demonstrated that periodontitis could be an independent risk factor for this condition. The nature of this connection is not yet clear. Individuals who suffer from periodontitis possess an evident susceptibility to some component of certain Gram-negative bacteria oral, which are present as normal flora in healthy individuals. We sought to determine whether the presence of maternal periodontal infection could be associated with PLBW in an animal model. Periodontitis was induced in female Balb/c mice through inoculation in the gum of a suspension of the microbial components obtained from subgingival of patients with periodontitis. Once the infection was established, according to signs and symptoms evaluated by a periodontal specialist, two infected female were paired with one healthy male. After confirmation of pregnancy and spontaneous birth, products were weighted. A control group of pregnant females without infection was similarly studied. Mice from infected mothers showed low weight at birth. Significant differences were observed between the experimental and the control group. From this model we can conclude that infection of the gums of female mice with microbial components periodontal obtained from patients with periodontitis predispose to low birth weight products.

doi:10.1016/j.ydbio.2007.03.149

Program/Abstract # 94
Molecular etiology of cleft palate formation in Wnt5a mutants

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Cleft palate, a common congenital disorder, arises from a failure in the highly regulated multiple-step process of the secondary palate development. Recent studies have implicated